

File : PLUSPAT

SS Results

1	5	(1) ..FAM JP61292918/PN
2	1	..CITB JP61292918/PN
3	1	..CITF JP61292918/PN

Search statement 4

Query/Command : prt set max

1 / 5 PLUSPAT - ©QUESTEL-ORBIT - image
PN - US4666291 A 19870519 [US4666291]
TI - (A) Light-exposure apparatus
PA - (A) HITACHI LTD (JP)
PAO - Hitachi, Ltd., Tokyo [JP]
IN - (A) INAGAKI AKIRA (JP); KEMBO YUKIO (JP); FUNATSU RYUICHI (JP);
KUNI ASAHIRO (JP); TANIGUCHI MOTOYA (JP)
AP - US85272986 19860416 [1986US-0852729]
PR - JP8017185 19850417 [1985JP-0080171]
JP13408485 19850621 [1985JP-0134084]
JP21904785 19851003 [1985JP-0219047]
IC - (A) G03B-027/68
EC - G03F-007/20T16
G03F-007/20T24
G03F-009/00T14
PCL - ORIGINAL (O) : 355052000; CROSS-REFERENCE (X) : 355053000
355076000
DT - Basic
CT - US4093378; US4239381; US4298273; US4315692; US4425038; US4537498; JP59-
106118
STG - (A) United States patent
AB - A light-exposure apparatus which can keep uniform the gap between
a mask and a wafer and reduce the density of arrangement of
vertical movers adapted to deform the wafer to thereby reduce cost
and weight of the apparatus. The apparatus has a thin plate
deforming mechanism comprising a chuck platen for holding on its
top surface the wafer, the bottom surface of the chuck platen
being formed with imperforate slits patterned in the form of a
grid composed of a plurality of triangular meshes so that the
chuck platen may be deformed along bending lines near the
triangular meshes, and a plurality of vertical movers for
vertically deforming the individual triangular meshes so as to
flatten or deform into a desired shape the wafer.

2 / 5 PLUSPAT - ©QUESTEL-ORBIT
PN - KR9001241 B1 19900305 [KR9001241]
TI - (B1) LIGHT EXPOSURE APPARATUS
PA - (B1) HITACHI LTD (JP)
IN - (B1) DANIKUCHI MODOYA (JP); FUNATSU YUIZI (JP); INAKAKI AKIRA
(JP); KUNI ASAHIRO (JP); GEMBO YUKIO (JP)
AP - KR8602815 19860414 [1986KR-0002815]
PR - JP8017185 19850417 [1985JP-0080171]
JP13408485 19850621 [1985JP-0134084]
JP21904785 19851003 [1985JP-0219047]
IC - (B1) H01L-021/64
EC - G03F-007/20T24
STG - (B1) Examined pat. App. (2nd pub.) B5
AB - A light exposure apparatus comprises a suction pump to make a
wafer to be sucked, and chuck platen (22) for deforming the wafer
along the bending line while the chuck platen having a slit (25)
which is made up of a number of mesh channel pattern. The wafer
having channel pattern and another wafer able to move its pattern,
while maintaining the space between the wafers with the action of
a number of vertical mover (23), are designed to be deformed.
The end of the slit is U-shaped or V-shaped.

3 / 5 PLUSPAT - ©QUESTEL-ORBIT - image

PN - JP61239638 A 19861024 [JP61239638]
 PN2 - JP5069306 B 19930930 [JP93069306]
 PN3 - JP1861899 C 19940808 [JP1861899]
 TI - (A) THIN PLATE FLATTENING CHUCK
 PA - (A) HITACHI LTD
 PA0 - (A) HITACHI LTD
 PA2 - (B) HITACHI LTD
 IN - (A) INAGAKI AKIRA; KENBO YUKIO; KUJI TOMOHIRO; FUNATSU RYUICHI;
 TANIGUCHI MOTOYA
 AP - JP8017185 19850417 [1985JP-0080171]
 PR - JP8017185 19850417 [1985JP-0080171]
 IC - (A) B23Q-003/08 H01L-021/30
 EC - G03F-007/20T16
 G03F-007/20T24
 G03F-009/00T14
 DT - Corresponding document
 STG - (A) Doc. Laid open to publ. Inspeç.
 STG2 - (B) Publd. Examined patent applic.
 STG3 - (C) Granted patent from 1000001 onwards
 AB - PURPOSE: To securely flatten a thin plate by a method wherein,
 when the thin plate being vacuum-attracted is made to deform in
 the upper and lower directions and is flattened, using a thin
 plate flattening chuck, the thin plate flattening chuck is
 provided with the chuck plate having reticular slit grooves to be
 provided in the back surface thereof; the vertically moving
 elements, by which the triangular lattices are made to vertically
 move at each intersection of the grooves and the thin plate is
 made to deform; and the housing to be used for vacuum-sucking both
 of the chuck plate and the vertically moving elements.
 CONSTITUTION: A flattening chuck 1, by which a thin plate such as
 a wafer 6 is flattened, is constituted of a chuck plate 2 to be
 used for vacuum-attracting the wafer 6 on the surface 2A thereof,
 plural vertically moving elements 3 to be mounted on the back
 surface 2B of the chuck plate 2 and a housing to be used for
 vacuum-sucking both of the chuck plate 2 and the vertically moving
 elements 3. Here the back surface 2A of the chuck plate 2 is
 provided with numerous slit grooves 5 to generate numerous
 triangular lattices 7 and these triangular lattices 7 are made to
 independently move vertically by the vertically moving elements 3
 to be provided at each intersection of the grooves. Moreover, the
 interior of the housing 4 is brought into a vacuum state by a
 vacuum source 10 to be provided on the side surface of the housing
 4 and both of the chuck plate 2 and the elements 3 are made to
 mutually bond. By such a constitution, the warpage and the swell
 of the wafer 6 are corrected to +-5.mu.m or less even when the
 warpage and the swell are generated in the wafer 6.
 COPYRIGHT: (C) 1986, JPO&Japio

4 / 5 PLUSPAT - ©QUESTEL-ORBIT - image

PN - JP62079647 A 19870413 [JP62079647]
 PN2 - JP6042508 B 19940601 [JP94042508]
 PN3 - JP1916979 C 19950323 [JP1916979]
 TI - (A) THIN PLATE DEFORMING DEVICE
 PA - (A) HITACHI LTD
 PA0 - (A) HITACHI LTD
 IN - (A) FUNATSU RYUICHI; TANIGUCHI MOTOYA; KUJI TOMOHIRO; KENBO YUKIO;
 INAGAKI AKIRA
 AP - JP21904785 19851003 [1985JP-0219047]
 PR - JP21904785 19851003 [1985JP-0219047]
 IC - (A) B23Q-003/08 G03F-007/20 H01L-021/30 H01L-021/68
 EC - G03F-007/20T24
 STG - (A) Doc. Laid open to publ. Inspec.

STG2- (B) Publd. Examined patent applic.
 STG3- (C) Granted patent from 1000001 onwards
 AB - PURPOSE: To hold uniformly the gap between a mask and a wafer and also to reduce the arrangement density of the vertically driving elements for deformation and to contrive a reduction in the cost and the lightening by a method wherein the chucking plate is formed in the prescribed form by moving the elastically deformable triangular elements forming the chucking plate in the vertical direction.
 CONSTITUTION: Slit grooves 5 formed their upper point parts in a U-shaped or V-shaped form are bored into a shucking plate 2 for dividing the chucking plate into a plurality of triangle-shaped elements 6 and the chucking plate is formed in such a way that each element 6 can be elastically deformed with the vicinities of the grooves as folded lines. After a wafer 1 having an uneven thickness is mounted on the surface of the chucking plate 2, vacuous air is supplied in air insertion grooves 7 and the wafer is attracted by suction pressure. The height of the flatness degree of the wafer 1 is measured, the upper end part positions of vertical motion mechanisms 3 are adjusted on the basis of the operated results, and the position deviation in the vertical direction of the wafer 1 is suppressed. Then, vacuous air is supplied in internal chambers 4a and the wafer 1 is positioned in a flattened state at the same time as the back surface of the chucking plate 2 is supported by the upper end parts of the vertical motion mechanisms 3 by suction pressure.
 COPYRIGHT: (C)1987,JPO&Japio

5 / 5 PLUSPAT - ©QUESTEL-ORBIT - image
 PN - JP61292918 A 19861223 [JP61292918]
 TI - (A) SHEET FLATTENING CHUCK
 PA - (A) HITACHI LTD
 PAO - (A) HITACHI LTD
 IN - (A) TANIGUCHI MOTOYA; FUNATSU RYUICHI; KUJI TOMOHIRO; KENBO YUKIO; INAGAKI AKIRA
 AP - JP13408485 19850621 [1985JP-0134084]
 PR - JP13408485 19850621 [1985JP-0134084]
 IC - (A) B23Q-003/00 H01L-021/30 H01L-021/68
 EC - G03F-007/20T24
 STG - (A) Doc. Laid open to publ. Inspec.
 AB - PURPOSE: To improve the reliability of miniaturization, thinning and connections, by omitting electric wirings to several vertically movable elements in a wafer flattening chuck flattening the surface of a wafer having warpage and undulations.
 CONSTITUTION: Contact probes 10 with two electrodes are each connected to the lower sections of a plurality of piezo elements 3 deforming a chuck plate 2, to which a wafer 1 is fixed, in the vertical direction from the back of the chuck plate 2, and a printed substrate 11 to which a predetermined wiring pattern is formed is brought into contact with the contact probes 10, thus supplying several piezo element 3 with voltage. Accordingly, electric wirings to respective element 3 are unnecessitated, thus improving the reliability of connections, then miniaturizing, lightening and thinning the whole chuck.
 COPYRIGHT: (C)1986,JPO&Japio